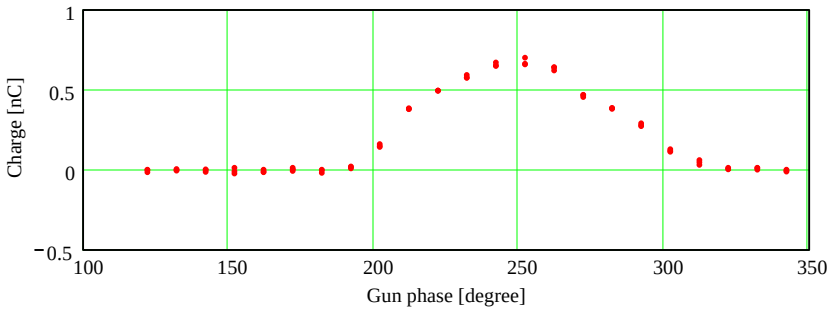
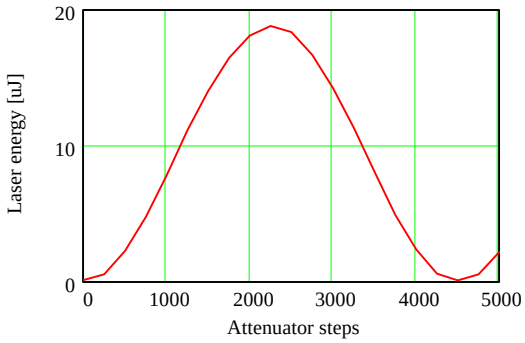
Measured on 05/02/2000

Photoinjector performance

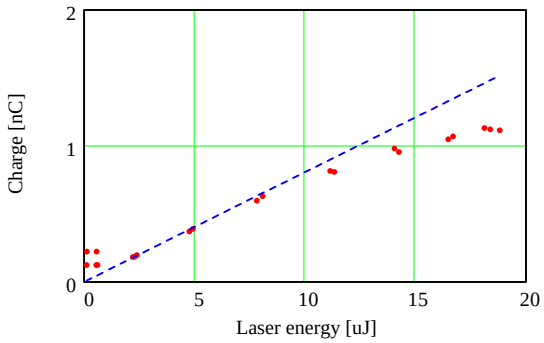
Charge (nC) vs. laser to RF nominal phase (degrees with arbitrary zero point):



Laser energy (microJoules) vs. laser cross polarizer (step number, arbitrary units):



Electron charge (nC) vs. Laser energy on the cathode (microJoules):



Derived quantities:

Maximum available laser energy [microJoules]: MaxLaserEnergy = 18.694

Space-charge limited laser energy [microJoules]: NomLaserEnergy = 8.232

Quantum efficiency [nC/microJoule]: QuantumEfficency = 0.081

Quantum efficiency [percent]: QuantumEfficency·0.466 = 0.038

Maximum (space-charge limitted laser energy) charge [nC]: MaxCharge = 0.701

measured at a laser energy of: LaserEnergyMean = 8.546

and at a nominal gun phase of: MaxGunPhase = 252.113

Statistics:

Laser energy standard deviation [%] LaserEnergyStdDev = 1.872

Peak to Peak laser energy jitter [%]: LaserEnergyPeak2Peak = 8.281

Operating point:

Nominal charge [nC]: NomCharge = 0.017

@ Gun Phase [deg]: NomGunPhase = 192.113

Gun Forward Power [Volts]: GunFrwdPower = −1.171